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WHY THE SHORT-WAR SCENARIO IS WRONG FOR NAVAL PLANNING.(U)

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WHY THE SHORT-WAR SCENARIO
IS WRONG FOR NAVAL PLANNING

Is it sensible to plan U.S. naval forces for a short war with the USSR? This paper argues that the answer is a firm, clear "no." The discussion focuses on conflict duration. Other important elements of planning, such as Soviet goals and strategy and the roles of nuclear weapons, are posited but not analyzed.

The U.S. Government's force-planning scenarios have tended to describe conflict in terms of geography, the objectives, strategies, and resources of the antagonists, and the duration of each level of violence. As widely noted in the press, academic circles, and official statements, a European war scenario has dominated our planning since the end of World War II. The phases of such a conflict are expected to be short. The essential phases are often described as (1) a brief period of warning, followed by (2) a Soviet attack on the central front, with conventional forces, leading to (3) either quick victory for the Soviets or rapid escalation to nuclear war.

General-purpose naval forces play a limited role in this "short war" scenario. The U.S. Navy is usually assumed to:

- Defend the sea lines of communications (SLOCs) to ensure the flow of reinforcements and resupply to Europe and to U.S. forces in the Pacific.
- Strike with carrier battle groups at Soviet forces on NATO's flanks or even in the territory of Warsaw Pact nations. The objectives are to keep Greece, Turkey, and Norway in the war, thus preventing greater Soviet concentration on the central front, and to engage the Soviet Navy as close to its bases as possible.

But serious problems may reduce the impact of the Navy's carrier strikes. The amount of ordnance they can deliver is limited by the number of carriers available. The linkage is difficult to establish between the Navy's strikes and the course of the war elsewhere. The short duration of the war may preclude the cumulative effects of maritime operations from reaching a strategically significant level. And the strikes must be made within range of Soviet bomber bases at a time when Soviet Naval Aviation is at full strength and can attack the battle groups.

Noting these problems, the Navy's critics have tended to argue that:

- The Navy should emphasize forces for SLOC defense: frigates, maritime patrol aircraft, attack submarines, mines, and surveillance systems.
- Carriers and amphibious forces would have no significant role; the war would be too short.
- Large surface ships are a dubious investment because they would not be useful for SLOC defense and would be vulnerable to modern weapons if they operated on the flanks or near the USSR.

The Navy has tried to defend its forces and programs in a short-war context. But maritime forces need time in order to have strategic effect, and the Navy's explanations of its roles in a short war have not silenced its critics. Instead, the Navy should attack the root problem, which is that the short-war model is wrong for planning naval forces.

Our theses are that:

- A short war, whether worldwide or confined to Europe, is an inappropriate basis for planning naval forces.
- There are other scenarios that are more likely and, from a naval viewpoint, more demanding. They offer a more realistic basis for planning naval forces.
- These scenarios call for a Navy oriented toward force projection and mobile sea control, but also containing enough SLOC defenses to permit static sea-control operations if needed.

WAR IN EUROPE: HOW IS IT RELATED TO PLANNING THE U.S. NAVY?

Should the Security of Europe Continue To Be a Central Concern in U.S. Navy Force Planning?

Western Europe is not the only focus of our security interests. These interests also encompass Persian Gulf oil, the vast economic and military structure of the Pacific nations, and events in the Caribbean. But the fact is that we would be far less secure if Western Europe were dominated by the USSR, since we would lose wealthy allies with substantial military forces while the Soviets would add enormous economic potential to their war machine.

There are other good reasons why we have focused on preparations for a war between NATO and the Warsaw Pact. The Soviets might be willing to take substantial risks to acquire Western Europe. They no doubt covet its wealth, and the proximity and size of Warsaw Pact forces pose an obvious threat. Conquest of West Germany would give the Soviets

total control over a nation which has damaged them in the past and which they still perceive as a threat.

For our part, it is important to recognize that our NATO allies, above all else, do not want another war on their territory. They believe the best way to deter the USSR is to link attack in Europe to thermonuclear war between the United States and the Soviet Union. But the Soviet drive toward nuclear parity has made this strategy increasingly unattractive to the United States and forced us to consider alternatives.

The Short-War Assumption

If there are good reasons to plan for war in Europe there are also reasons--not very good ones from the U.S. viewpoint--why many have supposed the war would be short. The prevailing judgment has been that a Soviet blitzkrieg could probably drive across Germany, take Denmark and the Netherlands, and reach the Channel. That outcome has been assumed to represent victory for the USSR, and therefore the "end of the problem." NATO might be forced to use nuclear weapons in a desperate attempt to stop the Soviet advance. But it has generally been assumed that, if nuclear weapons were used on the European battlefield, the conflict would quickly escalate at least to intercontinental counterforce if not to all-out nuclear war. That would again be the end of the problem in the eyes of many people.

The reasons for trying to deter an attack on Western Europe remain valid. But from the viewpoint of the United States, the argument that a Soviet blitzkrieg would lead to a short war never held water and is even less cogent today. The fallacies of this argument are outlined in the next subsection.

What Would be the Course of a War in Europe?

The two main issues are:

- Would the conflict escalate to strategic nuclear war?
- Would the Alliance continue military resistance after the Pact's advance stopped?

There are two reasons to think a European war would not escalate to an all-out nuclear exchange. First, the approximate parity of U.S. and Soviet strategic forces makes it unlikely that either side would initiate nuclear war. Second, as Soviet strategic forces have been moving toward parity with ours, their military thinking has been moving toward a doctrine in which protracted conventional conflict is a preferred and increasingly feasible option. No longer are the Soviets adamant that escalation to nuclear conflict would be "inevitable" in the event of war with the West.

Thus, we must look beyond the traditional "end of the problem" and ask ourselves what would happen if the Soviets invaded Western Europe and nuclear war did not follow. The answer is that the United States should expect to face a long, difficult, conventional struggle.

If the allies continued to resist, an updated version of World War II would ensue, with all that implies for the diversity and extent of naval operations. Rapid depletion of land-based forces, as in the 1973 Mideast War, could make sea-based projection forces more important.

On the other hand, if the Soviets subjugated our allies, the United States would be left to pursue its interests with no help from Europe. It would be difficult to find a satisfactory way to terminate the conflict. Soviet pressure would certainly continue worldwide. Again, the demand for naval forces would be high. In this case there would be time to generate national power, but the standing forces would have to include essential items that take a long time to produce.

But what if strategic nuclear war did occur, despite the dictates of reason and the movement of Soviet doctrine toward a conventional option? The answer is uncertain, but we must reckon with some distinct possibilities:

- There is no certainty that organized national effort would end. Strategic war could be followed by a period of reconstitution.
- Reconstitution would require a period of years--perhaps many years. And it probably would not be accompanied by "peace." Desultory nuclear strikes and other types of military action could go on indefinitely.
- Destruction of the superpowers would mean a great relative increase in the strength of hostile powers such as Cuba and Vietnam.
- General-purpose forces could well be essential to survival in this period. In fact, the United States should expect military threats to its survival until significant national power is regenerated. A wide variety of Navy and Marine Corps operations might be needed.
- The bulk of national power would have to be recreated over a period of time. Residual forces would have to include essential items that the country could not quickly produce after a nuclear war. Naval forces, by their nature, would be more likely than others to survive in significant numbers.

Summary

Europe remains important to our security. But the traditional reasons for believing in a "short war" have never been sound ones from the U.S. viewpoint. If a war occurred in Europe, then no matter what course the war followed, the United States could expect to find itself involved in a long struggle in which general-purpose naval forces would be vital. The major possibilities seem to be:

- Avoidance of nuclear war coupled with continued NATO resistance, leading to a long conventional war;
- Avoidance of nuclear war and collapse of European resistance, leading to a world in which the United States would have to pursue its interests without European allies;
- Escalation to nuclear war, followed by a long and dangerous period of reconstitution during which naval forces could be essential to the survival of the United States as a nation.

In each case, there would be time to generate national power. But the standing forces (and planned residual forces) should include essential items that otherwise might require years to produce.

WHAT IF THERE IS NEVER ANOTHER WAR IN EUROPE?

The main issue in this case is: does the USSR have a strategy to dominate Europe and continue its expansion by means other than direct attack? And if so, does Soviet strategy involve "diplomacy of force?" We may hope the answer to at least one of these questions is "no." But the evidence does not point that way.

If we are faced with an indirect strategy that may include the use of force at opportune times, then we will continue the political/economic/military struggle that entered its current phase when the Soviets developed thermonuclear weapons. From the U.S. Navy's point of view, the world will be characterized by:

- Continued deterrence of war in Europe
- A continuing requirement for deployment of U.S. forces to promote stability in the Third World
- Contingencies involving the military forces of non-NATO, non-Warsaw Pact nations
- Evolution of Soviet naval and other projection forces. The Soviet diplomacy of force specifically aims to "bind the hands of the imperialists" to prevent them from using military and naval forces for political purposes.

- Evolution of the sea control forces of other nations.

This is the situation CNA examined in the so-called Non-NATO Contingency Study (NNCS). Major conclusions of the NNCS were:

- The Navy needs highly capable forces to deal with the full range of crises and limited conflicts (including those involving or potentially involving the Soviets).
- In several warfare areas, the capabilities needed for crises and limited conflicts differ significantly from the corresponding capabilities required for general war.
- Some of the important planning for naval operations in peacetime, crisis, and limited conflict lies entirely outside the scope of preparation for general war.

In general, the NNCS suggested that capabilities for mobile sea control and force projection are essential to the U.S. Navy in the world as it is and will probably continue to be, in the absence of a war in Europe. The study also suggested there are many important naval warfare scenarios that remain to be examined, entirely outside the scope of the traditional European war scenario.

CONCLUSION

We can't expect to design a proper Navy for the future, or correctly assess the one we have today, without examining the full range of circumstances under which the Navy would be important to the country. Unfortunately, the short-war scenario that evolved after World War II was mistaken for a description of the war for which we should prepare all our forces. Thus, the "full range of circumstances" referred to above has been only partially described and studied. Examination of the logical possibilities shows that if war in Europe is avoided, we can expect an increasingly turbulent world of crises and limited conflicts, many (most?) of which could involve Soviet forces. On the other hand, if war occurs in Europe, the struggle will not be a short one for the United States, no matter how it develops. We will be regrouping after a nuclear exchange, or fighting a modern version of World War II, or stepping into the unknown against a much stronger enemy after the loss of our European allies.

The future Navy will operate in one or more of these general scenarios. Even though such scenarios are partly an exercise in imagination, we should try to delineate them further and analyze their requirements as best we can.

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- PP 214
Weinland, Robert G., "A Somewhat Different View of The Optimal Naval Posture," 37 pp., Jun 1978 (Presented at the 1976 Convention of the American Political Science Association (APSA/IUS Panel on "Changing Strategic Requirements and Military Posture"), Chicago, Ill., September 2, 1976), AD A056 228
- PP 215
Colle, Russell C., "Comments on: Principles of Information Retrieval by Manfred Kochen," 10 pp., Mar 78 (Published as a Letter to the Editor, Journal of Documentation, Vol. 31, No. 4, pages 298-301, December 1975), AD A054 426
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Colle, Russell C., "Lotka's Frequency Distribution of Scientific Productivity," 18 pp., Feb 1978 (Published in the Journal of the American Society for Information Science, Vol. 28, No. 6, pp. 366-370, November 1977), AD A054 425
- PP 217
Colle, Russell C., "Bibliometric Studies of Scientific Productivity," 17 pp., Mar 78 (Presented at the Annual Meeting of the American Society for Information Science held in San Francisco, California, October 1976), AD A054 442
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- PP 219
Huntzinger, R. LeVar, "Market Analysis with Rational Expectations: Theory and Estimation," 60 pp., Apr 78, AD A054 422
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"Portions of this work were completed at the Institute of Applied Mathematics and Statistics, University of British Columbia, Vancouver, Canada.
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Mangel, Marc, "Diffusion Theory of Reaction Rates, II Ornstein-Uhlenbeck Approximation," 34 pp., Feb 1978, AD A058 542
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Wilson, Desmond P., Jr., "Naval Projection Forces: The Case for a Responsive MAF," Aug 1978, AD A054 543
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Jacobson, Louis, "Can Policy Changes Be Made Acceptable to Labor?" Aug 1978 (Submitted for publication in Industrial and Labor Relations Review), AD A061 528

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Jacobson, Louis, "An Alternative Explanation of the Cyclical Pattern of Quits," 23 pp., Sep 1978
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Jondrow, James and Levy, Robert A., "Does Federal Expenditure Displace State and Local Expenditure: The Case of Construction Grants," 23 pp., Oct 1979, AD A061 529
- PP 235
Mizrahi, Maurice M., "The Semiclassical Expansion of the Anharmonic-Oscillator Propagator," 41 pp., Oct 1978 (Published in Journal of Mathematical Physics 20 (1979) pp. 844-855; AD A061 538
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Utgoff, Kathleen Classen, "Unemployment Insurance and The Employment Rate," 20 pp., Oct 1978 (Presented at the Conference on Economic Indicators and Performance: The Current Dilemma Facing Government and Business Leaders, presented by Indiana University Graduate School of Business). AD A061 527
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Trost, R. P. and Warner, J. T., "The Effects of Military Occupational Training on Civilian Earnings: An Income Selectivity Approach," 38 pp., Nov 1979k, AD A077 831
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Powers, Bruce, "Goals of the Center for Naval Analyses," 13 pp., Dec 1978, AD A063 759
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Mangel, Marc, "Fluctuations at Chemical Instabilities," 24 pp., Dec 1978 (Published in Journal of Chemical Physics, Vol. 69, No. 8, Oct 15, 1978). AD A063 787
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Sherman, Allen and Horowitz, Stanley A., "Maintenance Costs of Complex Equipment," 20 pp., Dec 1978 (Published By The American Society of Naval Engineers, Naval Engineers Journal, Vol. 91, No. 6, Dec 1979) AD A071 473
- 245
Simpson, William R., "The Accelerometer Methods of Obtaining Aircraft Performance from Flight Test Data (Dynamic Performance Testing)," 403 pp., Jun 1979, AD A075 226
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Brechtling, Frank, "Layoffs and Unemployment Insurance," 35 pp., Feb 1979 (Presented at the NBER Conference on "Low Income Labor Markets," Chicago, Jun 1978), AD A096 629
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Thomas, James A., Jr., "The Transport Properties of Dilute Gases in Applied Fields," 183 pp., Mar 1979, AD A096 464
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- PP 253
Glasser, Kenneth S., "The d-Choice Secretary Problem," 32 pp., Jun 1979, AD A075 225
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Mangel, Marc and Quenbeck, David B., "Integration of a Bivariate Normal Over an Offset Circle," 14 pp., Jun 1979, AD A096 471
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Mangel, Marc S. and Thomas, James A., Jr., "Analytical Methods in Search Theory," 86 pp., Nov 1979, AD A077 832
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Glass, David V.; Hsu, In-Ching; Nunn, Walter R., and Perlin, David A., "A Class of Commutative Markov Matrices," 17 pp., Nov 1979, AD A077 833
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Mangel, Marc S. and Cope, Davis K., "Detection Rate and Sweep Width in Visual Search," 14 pp., Nov 1979, AD A077 834
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Vile, Carlos L.; Zvijec, David J. and Ross, John, "Frank-Condon Theory of Chemical Dynamics. VI. Angular Distributions of Reaction Products," 14 pp., Nov 1979 (Reprinted from Journal Chemical Phys. 70(12), 15 Jun 1979), AD A076 287
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Petersen, Charles C., "Third World Military Elites in Soviet Perspective," 50 pp., Nov 1979, AD A077 835
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Weinland, Robert G., "War and Peace in the North: Some Political Implications of the Changing Military Situation in Northern Europe," 18 pp., Nov 1979 (Prepared for presentation to the Conference of the Nordic Balance in Perspective: The Changing Military and Political Situation," Center for Strategic and International Studies, Georgetown University, Jun 15-16, 1978) AD A077 838

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Dismales, Bradford, "Expected Demand for the U.S. Navy to Serve as An Instrument of U.S. Foreign Policy: Thinking About Political and Military Environmental Factors," 30 pp., Apr 1980, AD A085 099

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PP 285

Hennek, Richard B., "Superpower Security Interests in the Indian Ocean Area," 26 pp., Jun 1980, AD A087 113

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Roberts, Stephen S., "An Indicator of Informal Empire: Patterns of U.S. Navy Cruising on Overseas Stations, 1869-1897," 40 pp., Sept 1980 (Presented at Fourth Naval History Symposium, US Naval Academy, 26 October 1979, AD A091 316)

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Dismukes, Bradford and Petersen, Charles C., "Maritime Factors Affecting Iberian Security," (Factores Maritimos Que Afectan La Seguridad Ibeica) 14 pp., Oct 1980, AD A092 733

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Mizrahi, M.M., "Correspondence Rules and Path Integrals," Jul 1981. Published in "Nuovo Cimento B", Vol. 61 (1981)

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Stanford, Janette M. and Tai Te Wu,* "A Predictive Method for Determining Possible Three-dimensional Foldings of Immunoglobulin Backbones Around Antibody Combining Sites," 19 pp., Jun 1981 (Published in J. theor. Biol. (1981) 88, 421-439
*Northwestern University, Evanston, IL

PP 311

Bowes, Marianne, Brechling, Frank P. R., and Utgoff, Kathleen P. Classen, "An Evaluation of UI Funds," 13 pp., May 1981 (Published in National Commission on Unemployment Compensation's Unemployment Compensation: Studies and Research, Volume 2, July 1980)

PP 312

Jondrow, James; Bowes, Marianne and Levy, Robert, "The Optimum Speed Limit," 23 pp., May 1981

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Roberts, Stephen S., "The U.S. Navy in the 1980s," 36 pp., Jul 1981

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Kenny, Lawrence W., Lee, Lung-Fel, Maddala, G. S., and Trost R. P., "Returns to College Education: An Investigation of Self-Selection Bias Based on the Project Talent Data," 15 pp., Jan 1982. (Published in International Economic Review, Vol. 20, No. 3, October 1979)
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Lee, Lung-Fel, G.S. Maddala, and R. P. Trost, "Asymptotic Covariance Matrices of Two-Stage Probit and Two-Stage Tobit Methods for Simultaneous Equations Models with Selectivity," 13 pp., Jan 1982. (Published in Econometrica, Vol. 48, No. 2 (March, 1980))
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